

REMARKS

Claims 1-17 are all the claims pending in the application. Claims 1, 2 and 5-7 are rejected. Claims 3, 4 and 8-17 are withdrawn from consideration and have been cancelled without prejudice or disclaimer of rights under 35 U.S.C. § 121 as to the filing of a divisional application on the cancelled claims.

Claim Objections

Claims 6-7 are objected to because “the semiconducting layer” has no antecedent basis. This basis for objection has been removed by the present amendment of the claims.

Claim Rejection - 35 U.S.C. § 102

Claims 1 and 2 are rejected under 35 U.S.C. §102(b) as being anticipated by Barber et al (6,242,989). This rejection is traversed for at least the following reason.

Applicant strongly believe that claim 1, the only independent claim subject to rejection, defines subject matter that is both new and non-obvious over Barber et al on the basis of the following reasoning.

The device in Barber et al works in a completely different way to that of the present invention. Barber et al describes a capacitor that incorporates a movable plate located above two static electrodes. A bias is applied across the moveable plate and an electrostatic attraction is formed between the movable plate and the first electrode. This causes the movable plate to be pulled down towards the first electrode. As the distance between the movable plate and the first electrode decreases, the capacitance increases.

By contrast, the non-linear capacitor of the present invention does not rely on any mechanical motion of the capacitor plates with respect to each other. Instead, the present invention relies on the accumulation of a layer of semiconductor to provide a variable electrical connection between two plates.

Claim 1 specifies the provision of three conductor layers arranged as the source, drain and gate electrodes of a field effect transistor. In a field effect transistor, as is known in the art, source and drain electrodes are connected by a semiconductive channel. Original claim 1

therefore requires the existence of a semiconductive channel connecting the first and second conductor layers.

The electronic devices shown in those figures of Barber et al cited by the Examiner (i.e. Figures 3 to 6) do not include first and second conductor layers connected by a semiconductive channel.

The Examiner has alleged that this feature is shown by the transistor in Figure 20. However, the transistor in Figure 20 is not the same element as that shown in Figures 3 to 6 of Barber et al. As described at col. 14, line 63 to col. 15, line 41, Figures 18 to 20 show conventional oscillator circuits "suitable for use in conjunction with" (col. 15, lines 8 to 9) the variable capacitors of U. S. 6,242,989. The circuits include additional and separate elements such as bipolar transistors for amplification purposes. In Figure 20, the transistor T2 is additional to and separate from the variable capacitor. Thus, these figures do not and cannot constitute a teaching to arrange the plates of the devices of Figures 3 to 6 as the source, drain and gate electrodes of a field effect transistor.

Furthermore, there is no suggestion in Barber et al to do so. Indeed, the core teaching of Barber et al is to achieve variable capacitance by the very different technique of arranging the top plate (510 in Figures 5 and 6) so that it is movable from a neutral position towards one of two underlying co-planar electrodes (516 and 522 in Figures 5 and 6) and away from the other of the two underlying co-planar electrodes.

New Claim

New claim 18, which is directed to the same invention as elected by the Applicant and as examined by the Examiner, specifies that the first, second and third conductor layers are respectively arranged in a fixed position with respect to each other. This amendment is supported by the original specification as a whole.

Claim 18 is also patentable over Barber et al for the reasons given with respect to claim 1. Also, claim 18 states that the three conducting bodies are arranged in a fixed position, such that any one of them cannot be moveable towards and away from the remaining two of the three

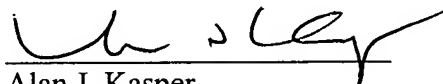
Amendment under 37 C.F.R. § 1.111
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conducting bodies. Clearly, this is contrary to the core teaching of Barber et al and would prevent the device of Barber et al from working in the way described in the patent.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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